Claims

1-41. (Canceled)

42. (Previously Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis; and

a terminal segment pivotably connected to the third segment,

wherein at least one of the segments is configured to have a predetermined normal range of normal rotation about its respective pivot axis and to permit over-rotation beyond the predetermined normal range without damage to the at least one segment.

43. (Currently Amended) The arm assembly of claim ~~38~~ 42, wherein the terminal segment is pivotably connected at a substantially horizontal pivot axis.

44. (Currently Amended) The arm assembly of claim ~~38~~ 42, further comprising a parallelogram supporting structure for at least one segment.

45. (Currently Amended) The arm assembly of claim ~~38~~ 42, further comprising a parallelogram supporting structure for at least the third segment.

46. (Canceled)

47. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis;

a fourth segment pivotably connected to the third segment at a substantially horizontal pivot axis;

a terminal segment pivotably connected to the fourth segment; ~~and~~

a multi-function electronic control unit coupled to one of the segments, the control unit being having wiring extending through at least one of the segments; and

a parallelogram supporting structure for at least one segment.

48. (Original) The arm assembly of claim 47, wherein the electronic control unit is coupled to the terminal segment.

49. (Original) The arm assembly of claim 47, wherein the electronic control unit is rotatably coupled to the terminal segment.

50. (Previously Amended) The arm assembly of claim 47, further comprising at least one tool holder rotatably mounted to the terminal segment.

51. (Previously Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis;

a fourth segment pivotably connected to the third segment at a substantially horizontal pivot axis;

a terminal segment pivotably connected to the fourth segment; and

wherein at least one of the segments is configured to have a predetermined normal range of normal rotation about its respective pivot axis and to permit over-rotation beyond the predetermined normal range without damage to the at least one segment.

52. (Previously Amended) The arm assembly of claim 47, wherein the terminal segment is pivotably connected at a substantially horizontal pivot axis.

53. (Canceled)

54. (Currently Amended) The arm assembly of claim 47, ~~further comprising a~~ wherein the parallelogram supporting structure is configured for at the third segment.

55. (Currently Amended) The arm assembly of claim 47, further comprising parallelogram ~~support~~ supporting structures for at least the third and fourth segments.

56-59. (Canceled)

60. (Currently Amended) The arm assembly of claim ~~38~~ 51, wherein the link arm segment has a distal end and the first segment is connected to the link arm segment at the distal end of the link arm segment.

61. (Currently Amended) The arm assembly of claim ~~38~~ 51, wherein the first segment has a distal end and the second segment is connected to the first segment at the distal end of the first segment.

62. (Currently Amended) The arm assembly of claim ~~38~~ 51, wherein the second segment has a distal end and the third segment is connected to the second segment at the distal end of the second segment.

63. (Currently Amended) The arm assembly of claim ~~38~~ 51, wherein the third segment has a distal end and the terminal segment is connected to the third segment at the distal end of the third segment.

64. (Previously Amended) The arm assembly of claim 47, wherein the link arm segment has a distal end and the first segment is connected to the link arm segment at the distal end of the link arm segment.

65. (Previously Amended) The arm assembly of claim 47, wherein the first segment has a distal end and the second segment is connected to the first segment at the distal end of the first segment.

66. (Previously Amended) The arm assembly of claim 47, wherein the second segment has a distal end and the third segment is connected to the second segment at the distal end of the second segment.

67. (Previously Amended) The arm assembly of claim 47, wherein the third segment has a distal end and the fourth segment is connected to the third segment at the distal end of the third segment.

68. (Previously Amended) The arm assembly of claim 47, wherein the fourth segment has a distal end and the terminal segment is connected to the fourth segment at the distal end of the fourth segment.

69-70. (Canceled)